CLAIMS

What is claimed is:

1. An isolated polypeptide comprising amino acid residues 20 to 200 of SEQ ID NO:5.

2. The isolated polypeptide of claim 1 wherein the polypeptide comprises amino acid residues 1-200 of SEQ ID NO:5.

3. The isolated polypeptide of claim 1 wherein the polypeptide has antiviral activity to hepatitis B.

4. The isolated polypeptide of claim 1 wherein the polypeptide has antiviral activity to hepatitis C.

5. The isolated polypeptide of claim 1 wherein the polypeptide is a recombinant polypeptide.

6. The isolated poylpeptide of claim 5 wherein the polypeptide is isolated from *Escherichia coli*.

7. The isolated poylpeptide of claim 5 wherein the polypeptide is isolated from Chinese hamster ovary cells.

8. An isolated polypeptide that has antiviral activity and wherein nucleic acid molecule encoding the polypeptide hybridizes to SEQ ID NO:4 under washing conditions of 0.1x - 0.2x SSC with 0.1% SDS at 50 - 65°C.

9. An isolated nucleic acid molecule comprising nucleotides 58 to 600 of SEQ ID NO:4.

10. The isolated nucleic acid molecule of claim 9 comprising nucleotides 1-600 of SEQ ID NO:4.

11. An isolated nucleic acid molecule encoding a polypeptide wherein the encoded polypeptide comprises amino acid residues 20 to 200 of SEQ ID NO:5.

12. The isolated nucleic acid molecule of claim 11 wherein the encoded polypeptide comprises amino acid residues 1 to 200 of SEQ ID NO:5.

13. The isolated nucleic acid molecule of claim 11 wherein the encoded polypeptide has antiviral activity to hepatitis B.

14. The isolated nucleic acid molecule of claim 11 wherein the encoded polypeptide has antiviral activity to hepatitis C.

15. A vector comprising the isolated nucleic acid molecule of claim 9.

16. An expression vector comprising the following operably linked elements:

a transcription promoter;
a nucleic acid molecule of claim 11; and
a transcription terminator; and
wherein the promoter is operably linked with the nucleic acid molecule; and wherein the nucleic acid molecule is operably linked with the transcription terminator.

17. A recombinant host cell comprising the expression vector of claim 16, wherein the host cell is selected from the group consisting of bacterium, yeast cell, fungal cell, insect cell, mammalian cell, and plant cell.

18. The recombinant host cell of claim 17 wherein the host cell is *Escherichia coli*.

19. The recombinant host cell of claim 17 wherein the host cell is a Chinese hamster ovary cell.

20. A method of producing Zcyto21 protein, the method comprising:

culturing recombinant host cells that comprise the expression vector of claim 16, and that produce the Zcyto21 protein.

21. The method of claim 20, further comprising isolating the Zcyto21 protein from the cultured recombinant host cells.

22. An antibody or antibody fragment that specifically binds with the polypeptide of claim 1.

23. A formulation comprising:

the polypeptide of claim 1; and

a pharmaceutically acceptable vehicle.